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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/588,439	08/07/2006	Taisei Suemitsu	294601US2PCT	8392

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EXAMINER	
HAIDER, SYED	

ART UNIT	PAPER NUMBER
2611	

NOTIFICATION DATE	DELIVERY MODE
09/17/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/588,439	SUEMITSU ET AL.	
	Examiner	Art Unit	
	SYED HAIDER	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06/15/2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Response to Arguments

1. Applicant's arguments with respect to claims 1-6, have been considered but are moot in view of the new ground(s) of rejection.

DETAILED ACTION

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akiyama (JP 2002-141821) and further in view of Filipovic (US PGPub # 2004/0120421).

As per claim 1, Akiyama discloses a wireless apparatus comprising:

a mixer (Akiyama, Fig. 2:6) for converting a frequency of a received signal (Akiyama, Fig. 2:5);

an analog filter (Akiyama, Fig. 2:7) for filtering the received signal (Akiyama, Fig. 2:5) whose frequency has been converted by said mixer (Akiyama, Fig. 2:6); an analog-to-digital converter (Akiyama, Fig. 2:11) for converting the received analog signal filtered

by said analog filter into a digital signal (Akiyama, Fig. 2:11, which converts the received analog signal into digital);

a digital filter (Akiyama, Fig. 1:3) having a band limiting characteristic which is inverse to that of said analog filter with respect to an ideal filter (Akiyama, paragraph#10, explains that a calculating means performs a filter operation using a digital filter which has the characteristic contrary to the delay characteristics of an analog bandpass filter to a perverted received signal), for filtering the digital signal into which the received signal has been converted by said analog-to-digital converter (Akiyama, paragraph#10, explains that a calculating means performs a filter operation using a digital filter which has the characteristic contrary to the delay characteristics of an analog bandpass filter to a perverted received signal.); and

when determining from a receive level of the received signal (Akiyama, paragraph#10) that the filtering by said digital filter (Akiyama, Fig. 1:3) will increase distortion of the received signal (Akiyama, paragraph#10).

Akiyama does not disclose a digital filter control unit.

Filipovic discloses a digital filter control unit (Filipovic, Fig. 1:24, control unit, which controls the digital filter) for disabling the filtering of the digital signal (Filipovic, paragraph#22, explains that a control unit 24 may send control signals 25 to selectively enable or disable digital filter 20 based on the current wireless protocol being supported).

At the time of the invention it would have been obvious to one ordinary skill in the art to modify Akiyama teachings by implementing the control unit to the radio apparatus, as taught by Filipovic.

The motivation would be to provide a wireless device which can support two or more wireless protocols efficiently and distinct components conventionally used in wireless device that support a plurality of protocols may be eliminated in favor of one or more components that can be used in the communication modes associated with the different wireless protocols.

As per claim 6, Akiyama in view of Filipovic further discloses the wireless apparatus according to Claim 1, wherein said digital filter includes an output selecting unit for selecting (Akiyama, paragraph#34) and outputting the received signal which has been filtered by said digital filter (Akiyama, Fig. 1:3) or the received signal which has not been filtered by said digital filter according to enabling or disabling control of the filtering of the digital signal (Filipovic, paragraph#22, explains that a control unit 24 may send control signals 25 to selectively enable or disable digital filter 20 based on the current wireless protocol being supported) by said digital filter control unit (Filipovic, Fig. 1:24, control unit, which controls the digital filter).

4. Claims 2-5, are rejected under 35 U.S.C. 103(a) as being unpatentable over Akiyama (JP 2002-141821) and further in view of Filipovic (US PGPub # 2004/0120421) and further in view of Nakamura (US PGPub # 2002/0176364).

As per claim 2, Akiyama in view of Filipovic further discloses the wireless apparatus according to Claim 1, wherein said digital filter control unit (Filipovic, Fig. 1:24, control unit, which controls the digital filter) includes which said digital filter control unit uses when disabling the filtering of the digital signal (Filipovic, paragraph#22, explains that a control unit 24 may send control signals 25 to selectively enable or disable digital filter 20 based on the current wireless protocol being supported) by the digital filter (Akiyama, Fig. 1:3),

Akiyama in view of Filipovic does not disclose receive level detector for detecting the receive level of the received signal, a threshold storage unit for storing a receive level threshold.

Nakamura discloses a receiver level detector (Nakamura, Fig. 1:5, and further in paragraph#47, it explains that the radio frequency signal receiving unit 5 in accordance with the present embodiment has a function of measuring the signal levels of the radio frequency signals as received and outputting measurement results to the signal level storing unit 9) and a level comparison unit (Nakamura, Fig. 1:8).

according to a comparison between the receive level detected (Nakamura, paragraph#54, explains that the threshold level comparing unit 8 reads out the threshold

level stored in the threshold level storing unit 10, extracts the carrier numbers corresponding to the signal levels (the result of the operation) within the range determined by the threshold level (for example, the signal levels exceeding or falling under the threshold level) by comparing the threshold level as read with the result of the operation received from the calculation result storing unit 6, and then outputs the carrier numbers as extracted to the carrier number storing unit 7) by said receive level detector (Nakamura, Fig. 1:5) and the receive level threshold stored in said threshold storage unit (Nakamura, Fig. 1:10).

At the time of the invention it would have been obvious to one ordinary skill in the art to modify Akiyama in view of Filipovic teachings by implementing the radio frequency signal receiving unit and threshold level comparing and storing unit to the wireless communication system, as taught by Nakamura.

The motivation would be to provide a wireless communication system which relates to an interference detection method and an interference avoidance system for detecting interference with another wireless communication device and effectively avoiding the interference, as taught by Nakamura.

As per claim 3, Akiyama in view of Filipovic further in view of Nakamura discloses the wireless apparatus according to Claim 2, wherein said threshold storage unit stores (Nakamura, Fig. 1:10), as the receive level threshold which said digital filter control unit (Filipovic, Fig. 1:24, control unit, which controls the digital filter) uses when disabling the filtering of the digital signal by said digital filter (Filipovic, paragraph#22, explains that a

control unit 24 may send control signals 25 to selectively enable or disable digital filter 20 based on the current wireless protocol being supported), a linear receive level high limit of the received signal (Akiyama, Fig. 2:5) which is influenced by an analog unit (Akiyama, Fig. 2:7) including the mixer (Akiyama, Fig. 2:6), the analog filter (Akiyama, Fig. 2:7), and the analog-to-digital converter (Akiyama, Fig. 2:11).

As per claim 4, Akiyama in view of Filipovic further in view of Nakamura discloses the wireless apparatus according to Claim 2, wherein said threshold storage unit stores (Nakamura, Fig. 1:10), as the receive level threshold (Nakamura, Fig. 1:8) which said digital filter control unit (Filipovic, Fig. 1:24, control unit, which controls the digital filter) uses when disabling the filtering of the digital signal (Filipovic, paragraph#22, explains that a control unit 24 may send control signals 25 to selectively enable or disable digital filter 20 based on the current wireless protocol being supported) by said digital filter (Akiyama, Fig. 1:3), a linear receive level low limit of the received signal (Nakamura, Fig. 1:8, which determines high or low limit of the received signal) which is influenced by an analog unit including the mixer (Akiyama, Fig. 2:6), the analog filter (Akiyama, Fig. 2:7), and the analog-to-digital converter (Akiyama, Fig. 2:11).

As per claim 5, Akiyama in view of Filipovic further in view of Nakamura discloses the wireless apparatus according to Claim 2, wherein said threshold storage unit stores (Nakamura, Fig. 1:10), as the receive level threshold (Nakamura, Fig. 1:8) which said digital filter control unit (Filipovic, Fig. 1:24, control unit, which controls the digital filter)

uses when disabling the filtering of the digital signal by said digital filter (Filipovic, paragraph#22, explains that a control unit 24 may send control signals 25 to selectively enable or disable digital filter 20 based on the current wireless protocol being supported), a linear receive level high limit (Nakamura, Fig. 1:8, which determines high or low limit of the received signal) and a linear receive level low limit (Nakamura, Fig. 1:8, which determines high or low limit of the received signal) of the received signal (Akiyama, Fig. 2:5) which is influenced by an analog unit including the mixer (Akiyama, Fig. 2:6), the analog filter (Akiyama, Fig. 2:7), and the analog-to-digital converter (Akiyama, Fig. 2:11).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SYED HAIDER whose telephone number is (571)270-5169. The examiner can normally be reached on Monday thru Friday 8:00 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shuwang, Liu can be reached on 571-272-3036. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Syed Haider/

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